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In this paper, non-standard types of agreement are examined. Such agreement types are those in which two or more supposedly agreeing categories show discord rather than concord. For example, if a language has noun-adjective agreement, there may, under limited circumstances, be non-standard agreement where the subject is plural and the agreeing adjective is feminine singular. Instances of such agreement discord as found in various languages are investigated. An earlier advanced Syntactic Feature Switching hypothesis which attempted to account for cases of non-standard agreement on the basis of a value changing transformation is examined and rejected. Instead, a principle-derived hypothesis, that of marking, is proposed and defended. Marking, an operation based on markedness and paralleling that of neutralization, shows that non-standard types of agreement are not due to deviations in the agreement transformation or to new power in any other transformation, but rather to an optionality condition (or other conditions) on agreement and a feature-adding transformation which, under certain conditions, "marks" a category. The analyses presented involve the theory of markedness as well as the simplex feature theory, both of which are discussed. (Author)

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NON-STANDARD CONCORD AND THE MARKING HYPOTHESIS

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ABSTRACT

In this paper, non-standard types of agreement are examined. Such agreement types are those in which two or more supposedly agreeing categories show discord rather than concord. For example, if a language has noun-adjective agreement, there may, under limited circumstances, be non-standard agreement where the subject is plural and the agreeing adjective is feminine singular. Instances of such agreement discord as found in various languages are investigated. An earlier advanced Syntactic Feature Switching hypothesis which attempted to account for cases of non-standard agreement on the basis of a value changing transformation is examined and rejected. Instead, a principle-derived hypothesis, that of marking, is proposed and defended. Marking, an operation based on markedness and paralleling that of neutralization, shows that non-standard types of agreement are not due to deviations in the agreement transformation or to new power in any other transformation, but rather to an optionality condition (or other conditions) on agreement and a feature adding transformation which, under certain conditions, 'marks' a category. The analyses presented involve the theory of markedness as well as the simplex feature theory, both of which are discussed.

Introduction

This paper discusses non-standard concords and their implications for a universal agreement rule. The approach is transformational and involves both markedness and simplex feature theory. The first part of the paper examines the Syntactic Feature Switching hypothesis as a means of accounting for non-standard agreement in ARABIC and CHIPPEWA. This hypothesis is then shown to be inadequate when applied to the data of GALLINYA. Following that the Marking hypothesis is introduced and defended. The non-standard concords of various languages are then examined and analyzed. Marking, it is shown, not only provides a description but in fact an explanation of the non-standard agreements encountered.

The scope of this paper is restricted to specific types of non-standard concord. These, it will be shown, can be accounted for by a set of conditions on a universal agreement rule and/or by the operation of marking. Types of concord which are not considered are those involving noun classifiers such as those typically found in BANTU languages. Non-standard agreement in pronouns is also not discussed. For example, apparent discords such as in the GERMAN:

Das Mädchen ist gekommen. {Sie ....; Es ....}

'The (neuter) girl came.' {'She ....'; 'It ....'}

will not be considered. All of these, it will be seen, appear to have no direct bearing on the principles advanced in this paper.

1. Syntactic Feature Switching

In an article entitled "Syntactic Feature Switching: two cases"[1] I examined data taken from ARABIC and CHIPPEWA which provided evidence in support of syntactic feature switching (henceforth, SFS) transformations. Such transformations not only challenged the notion that transformations

[1] See Delisle, WPLU No. 10, 51-91.

should be meaning preserving,[2] but also introduced new power into the theory of transformational grammar by allowing for the value of syntactic features to be transformationally altered. If transformations are allowed to freely perform switching operations on syntactic features, then the generation of non-natural language data becomes possible. Such over-power results in grammars that may at first appear to be adequate but in fact fall short of the goals of natural language characterization.[3] In order to curb this over-power, a set of constraints on feature switching operations was proposed in the form of a hypothesis. These constraints were tentative, however, since they were based on the analyses of only two cases of SFS. The proposed constraints therefore require verification. Furthermore, if these constraints are to have any explanatory value, they will have to be derived from a general and universal (metatheoretical) principle. This aspect of syntactic feature switching has not yet been examined and, as we shall see, will result in a re-evaluation of the operation.

Let us first examine the constraints proposed on SFS and very briefly review the operations that the SFS rule performs in CHIPPEWA and ARABIC. These tentative constraints are as follows:

"All Syntactic Feature Switch Rules:

a. simultaneously make reference to both the features of gender and number.

b. polarize any one of the two features and normalize the other."[4]

The first constraint, a., restricts syntactic feature switching to operating

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[2] For a discussion of the assumption that semantic features are invariant under transformation, see Chomsky, 1965 and Katz and Postal, 1964.

[3] For examples of over-power in language theory and for examples of its consequences, see my discussion of feature switching and in particular that of global constraints in Delisle, WPLU No.10, 58-62.

[4] Ibid., 88. The discussions and the data that will be presented here constitute only a small sub-part of the total discussion and data presented in the paper on SFS. For a detailed discussion of the issues summarized in this first part of the paper as well as for additional data, see ibid. and Delisle, 1972, doctoral dissertation.

only on the features of number and gender. In addition, this operation must be simultaneous. That is, one rule cannot, for example, operate on number and a later rule on gender. The second contraint, b., restricts the types of operations that may be performed on number and gender. Polarization is that operation which reverses (switches) the value of a feature. For example, if [masc] were to be polarized, it would become [fem]. Normalization is that operation which neutralizes the value of a feature. For example, if a noun is normalized such that [plur] is the standard feature, number distinctions will be lost on that noun. That is, all such normalized nouns will be plural in the surface structure regardless of what was their original number specification. Examples of normalization and polarization will now be examined in ARABIC and CHIPPEWA.

CAIRO ARABIC offers an example of SFS. This data, it will be seen, can be accounted for by an optional SFS transformation. Consider the following:

1) il riggaala gom (verb is plural, unspecified for gender)
   il riggaala gat (verb is feminine, singular)
   'The men came.'
2) il sittaat gom (verb is plural, unspecified for gender)
   il sittaat gat (verb is feminine, singular)
   'The women came.'

In examples 1) and 2), the verb may optionally be plural and unspecified for number, or it can be feminine singular. This alternation can be characterized by a SFS rule which optionally changes an animate plural and non-enumerative noun phrase to one which is singular and feminine. That is, such a rule polarizes number and normalizes gender.

Crucial in determining where SFS may optionally apply and where it may not apply at all is the question of underlying (non-enumerative) versus derived (enumerative) plurality. It has been argued that these two types of plurality are a fact of language which can be characterized first, by the underlying assignment of the primitive element [plur] to a category and

second, by the derivation of that same feature in instances of noun phrase coordination. Given that this is the case, there is a formal way of preventing SFS from applying to enumerative constructions by defining such switching only on underlying plurality. For example, when plurality is enumerative (derived), SFS may not occur:

3) xamsiin sit gom
*xamsiin sit gat
'Fifty women came.'

4) il sittaat dool gom
*il sittaat di gat
'Those women came.'

It was earlier seen in sentences 1) and 2), that the nouns riggaala and sittaat have underlying plural specifications and that the verb can therefore either be gom or gat. On the other hand, in sentences 3) and 4), the nouns are plural by derivation. The verb can therefore only be gom and not *gat. That is, plurality in sentences 3) and 4) resulted from a plural derivation rule applying to underlying coordinated noun phrases before these noun phrases underwent reduction. In fact when such coordinated noun phrases cannot be reduced, plural agreement, as expected, is as in sentences 3) and 4):

5) il raagil wi il sit gom
*il raagil wi il sit gat
'The man and the woman came.'

By defining the SFS rule on plural but non-coordinated configurations, switching is possible in sentences 1) and 2) but not 3), 4), and 5).

In CHIPPEWA, the circumstances under which SFS occurs are different from those of ARABIC. In CHIPPEWA, SFS takes place in situations which have traditionally been described as involving the fourth person. When both the subject and object are animate third person noun phrases, then the object noun phrase undergoes polarization in gender and normalization of number. In the following examples, observe where SFS has taken place: (wābam is the transitive root of the verb 'to see')

6) nĩn niwābamā a'aw ikwe
I I+see+him/her that(anim, sing) woman (anim, sing)
'I see that woman.'

7) wĩn owābamān iniw ikwewan
he he+sees+him/her/them that/those (inanim, plur) woman/women
'He sees that woman.' or 'He sees those women.' (inanim, plur)

but not

8) *wĩn owābamā a'aw ikwe
he he+sees+him/her that(inanim, plur) woman(anim, sing)

nor

9) *wĩn owābamāg ingiw ikwewag
he he+sees+them those(anim, plur) women (anim, plur)
'He sees those women.'

In sentence 7), the object noun phrase is superficially inanimate and plural. Due to the normalization of the feature of number in the object noun phrase, that noun phrase can now be interpreted as either being singular or plural. The fact that the object noun phrase is specified as either being singular or plural is lost after feature switching has taken place. The result is that the invariance condition on transformations cannot be maintained (see footnote 2).

2. Markedness and SFS

Having briefly examined instances of SFS in CHIPPEWA and ARABIC, let us now turn to what may be cases of SFS in other languages. An example of what appears to be SFS may be found in GALLINYA, a KUSHITIC language. Note the following alternations:[5]

10) namiči soŏresa
man rich (masc, sing)
'The man is rich.'

11) nititin {soŏretida / soŏresa}
woman {rich (fem, sing) / rich (masc, sing)}
'The woman is rich.'

12) namičon:i {soŏres:ota / soŏresa}
men {rich (plur, no gender) / rich (masc, sing)}
'The men are rich.'

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[5] I am grateful to Bayene Nagewo, a native speaker of GALLINYA, for this data.

(13 nititːoːni {sořesːota / sořesa}
women {rich (plur, no gender) / rich (masc, sing)}
'The women are rich.'

In GALLINYA, when the subject is human and animate, the adjective can optionally be masculine and singular. This holds true regardless of the number and gender of the subject. Note that this does not appear to be a true case of SFS. That is, condition a. of the SFS hypothesis is met but not condition b. (see earlier mentioned constraints on SFS). Although there are alternations involving both number and gender, it is not the case that one is polarized and the other is normalized. In fact, since 'rich' can always be masculine and singular, it appears that double normalization would best describe the process which allows for sentences 11), 12), and 13) to optionally take a masculine singular adjective. That is, both number and gender appear to be normalized to singular and masculine respectively.

In order to further clarify what has been termed double normalization, consider a rule which performs the following operation:

Rule 1: Under given circumstances, optionally change the gender and number of an animate and human noun to masculine and singular respectively, regardless of its existing specifications.[6]

Rule 1 must be considered as performing a double normalizing operation in that any animate and human noun phrase, regardless of its number and gender, will be masculine and singular. Such a rule, if shown to be necessary, demonstrates the inadequacy of the SFS hypothesis.

It is crucial that rule 1 apply after segmentation but before agreement and that it be optional.[7] For example, the derivation of sentence 12), 'The men are rich.', could be as follows:

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[6] In such rule, I will usually state: "Under given circumstances ...." I am assuming that polarization and normalization are restricted by environmental factors. Such factors will be specified as the analysis procedes.

[7] Both segmentation and agreement will be discussed shortly.

Derivation 1: namiči [N, masc, plur, anim, hum] sǒres (assume that sǒres is the adjective root for 'rich')

A. Segmentation

namiči + plur [N, masc, anim, hum] sǒres

B. Double Normalization (optional)

namiči + plur [N, masc, sing, anim, hum] sǒres

C. Agreement

namiči + plur sǒres [Adj, masc, sing]

D. Segmentation

namiči + plur sǒres + [masc, sing]

E. Morphophonemics

namičon:i sǒresa
'The men are rich.'

Derivation 1 is obviously not very satisfying. Rules A through E have to be extrinsically ordered and furthermore, segmentation has to apply twice and at different points in the derivation. This clearly appears to be ad hoc suggesting that perhaps the data of sentences 10) through 13) does not involve SFS at all and that some other principle is at work.

Since neither the SFS hypothesis nor an additional double normalizing rule satisfactorily account for the data of GALLINYA, let us consider a different approach, one that involves markedness.[8] Assume that in

[8] I have argued that markedness is a universal principle operative in syntax. Supporting evidence for this came from FRENCH, CHIPPEWA, and TEMNE (see Delisle, 1972, doctoral dissertation, 103-157). For a detailed discussion of markedness in all aspects of grammar, see Greenberg, 1966b).

GALLINYA, soŏresa is the unmarked form of the adjective. When lexicalization applies, the features specifying 'rich' will always result in soŏresa. Given that soŏresa is the most basic or unmarked form of the adjective, it will redundantly be specified as being masculine and singular by universal markedness rules. That is, masculine and singular are the unmarked features of gender and number; feminine and plural the marked features. If soŏresa is to become feminine singular, as in sentence 11), or plural as in sentences 12) and 13), this will be achieved by the application of an agreement rule. Such a rule will make the number and gender features of the adjective identical to the number and gender features of the noun that the adjective in question modifies.[9]

Taking as given that soŏresa is unmarked, there is now a principled way of accounting for sentences 10) through 13). All that is required is that agreement be optional. In all of the four sentences (10) through 13)), the occurrence of soŏresa is due to the fact that agreement does not apply. In sentence 10), if agreement does apply, the application is vacuous and no change results. In sentence 11), the application of agreement results in the number and gender features of the noun (fem, sing) being assigned to the adjective, this yielding soŏretida. In sentences 12) and 13), agreement is only in number. When it applies, gender is neutralized and the resulting plural form is soŏres:ota. The facts are therefore characterized. (Sample derivations will later be given.)

The account just given is principled in that it draws on a metatheoretical principle to explain the data. That is, the alternations in sentences 10) through 13) are a consequence of an independently motivated universal principle (markedness) working in conjunction with an also independently required and optional rule (agreement), rather than the result of an ad hoc double normalizing operation (rule 1).[10] The data of GALLINYA (sentences 10) through 13))therefore only appears to suggest a case of SFS; in fact such

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[9] The agreement rule discussed here specifies agreement both external and internal to the noun phrase. For a discussion of nounphrase internal and noun phrase external agreement, see E. Moravcsik, WPLU No. 5, A16.

[10] This notion of linguistic explanation will later be discussed (see ftnt. 29).

data is the result of markedness and of optional agreement. At this point there therefore seems to be no relation between SFS and the alternations found in sentences 10) through 13), the result being the saving of SFS. This, it will later be seen, is not the case. Given markedness and other related principles, it will no longer be possible to defend SFS as being a natural language operation.

3. Three defensible universals

In order to clarify the solution just discussed, I will now state more formally some of the principles that were invoked. Following this will be a discussion of these principles. Roman numerals I, II, and III are proposed as being universal:

I. Markedness is a universal principle operative on all syntactic (probably also all phonological and semantic) features of language. Given a set of related syntactic features (for example, masculine and feminine), one of the members of that set will be assumed as being marked or basic and therefore predictable.[11]

II. Masculine and singular are the unmarked features of gender and number when these occur in paired sets.[12]

III. Agreement is a universal rule performing a defined operation on a universally restricted set of features such as, for example, those of gender, number, person, and definiteness.[13] This operation applies only to those features which are marked copying them from one centrally specified category to other peripherally specified categories. For example, the head noun of a noun phrase appears to be the centrally specified category with which articles, adjectives, demonstratives and third person personal and possessive pronouns agree. Other categories which involve agreement with (non-primitive) derived

[11] For a discussion of this universal, see Delisle, 1972 doctoral dissertation and Greenberg, 1966b, where he discusses in detail the various characteristics of marked – unmarked categories in grammar.

[12] Due to lack of evidence, I am not extending this generalization to include feature sets of more than two members. This will again be discussed (see footnotes 27 and 33).

[13] For a listing of agreement features and categories, see Moravcsik, WPLU No. 5, A3-A8.

> elements such as, for example, the feature of plurality on numerals and on coordinated noun phrases appear to alter this general directionality condition on agreement. That is, as well later be seen, it is a singular noun which (often optionally) becomes plural, agreeing in number with the derived plurality of the numeral, and not vice versa.[14]

Given these three proposed universals, I, II, and III, it should now be clear that specific types of non-standard agreement can be characterized simply by imposing an optionality condition on agreement. For example, the data of GALLINYA, sentences 10) through 13), can now be accounted for by very limited language specific constraints, namely when the subject noun is animate, GALLINYA allows agreement to apply optionally. The agreement alternations are then the result of independently motivated universal rules and principles. All of the 'oddity' of this type of non-standard agreement is therefore reduced to a quite ordinary optionality condition.

At this point, I will discuss the proposed universals beginning with III on agreement. Because agreement is proposed as being a universal rule, it is not implied that all languages must make use of this operation. CHINESE for example, apparently shows very little agreement. ENGLISH, also, has agreement with very few categories and features. The extent to which the agreement rule is used is language specific. But if a language is to make use of agreement, then it will necessarily have to perform a feature copying operation from certain specified categories onto other specified categories

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[14] This appears to contradict the noun phrase internal and noun phrase external classification proposed by Moravcsik where numerals are considered under noun phrase internal agreement as are articles, adjectives, etc. (see Moravcsik, WPLU No. 5, A16). Numerals are plural by derivation rather than by underlying specification and this appears to have some bearing on agreement. (For evidence of this, see the discussion on underlying versus derived plurality in ARABIC, Delisle, WPLU No. 10.) It may be that agreement takes place with the head noun only when the features involved are primitive (non-derivеded). At this point, these are no more than suggestive observations and the matter will not be pursued in this paper.

depending upon the categories involved. Furthermore, that language will have to restrict this operation to the members of universally defined sets of features, and this feature copying operation will have to be restricted to one or more universally defined categories. A universal such as III therefore limits or defines what may or may not be done under the rubric of agreement.[15]

Universal III could, for example, be falsified by demonstrating that the various agreements of sentences 11), 12), and 13) are the result of a 'mismatching' operation rather than that of optional agreement. That is, if it can be shown that it is necessary for Gallinya to have a rule which optionally specifies an adjective as [masc] when the noun it modifies is [fem] (see sentences 11) and 13)), such an agreement rule will falsify universal III. To give the agreement transformation such power without well-founded evidence, is to overlook a recognized and intuitive fact of language. When there is agreement between two or more categories, those categories are 'matched' rather than 'mismatched' for agreeing features. The proposed agreement universal therefore has empirically verifiable consequences.

The question may then be raised as to what happens when, as a result of agreement (feature copying), feature clashes result. If agreement applies, for example, to sentence 11), nititin soresa or nititin soretida, the result is that soresa is specified as [sing, masc, fem]. But in order to obtain soretida, the feature [masc] must be neutralized. However, the conflict results only because agreement copied the marked gender feature, [fem], of nititin on the predicate adjective. In fact, any application of the agreement rule (the copying of marked features) will always result in feature clashing with corresponding unmarked features. That is, the copying of a marked feature on a category will always result in a conflict with the unmarked

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[15] Universal III can even further be constrained by ranking sets of features with each other. Suggestive of such ranking is one of Greenberg's implicational universals on gender and number: "36. If a language has the category of gender, it always has the category of number." (1963: 112).

feature specifying that category. The obvious solution is therefore to delete any unmarked clashing feature resulting from the application of agreement. This can be done by placing a metatheoretical convention on agreement which will delete any feature occurring on a category when this feature conflicts with the feature being transferred by agreement. In other words, any time agreement applies, marked features are copied on one or more categorial nodes and the related unmarked features occurring on these nodes are deleted. In the case of nititin soŏresa, when agreement applies, [masc], the unmarked feature occuring on soŏresa is deleted and replaced by [fem]. soŏretida is then obtained.

Let us now turn to universals I and II. Markedness, universal I, is claimed as being a universal principle allowing for one member of a set of related features to be basic (unmarked) and predictable. An important theoretical consequence of markedness is that alpha rules are no longer necessary as a part of the theory of language. Consider a language, for example French, which has noun-adjective gender agreement. Such agreement could be characterized as follows:

$$\text{Alpha Ag:} \quad \begin{bmatrix} \text{N} \\ \alpha\,\text{masc} \end{bmatrix} + [\text{Adj}] \Rightarrow \begin{bmatrix} \text{N} \\ \alpha\,\text{masc} \end{bmatrix} \begin{bmatrix} \text{Adj} \\ \alpha\,\text{masc} \end{bmatrix}$$

The variable power of alpha allows for the conflation of two parallel rules such as Ag 1 and Ag 2:

$$\text{Ag 1:} \quad \begin{bmatrix} \text{N} \\ \text{masc} \end{bmatrix} + [\text{Adj}] \Rightarrow \begin{bmatrix} \text{N} \\ \text{masc} \end{bmatrix} + \begin{bmatrix} \text{Adj} \\ \text{masc} \end{bmatrix}$$

$$\text{Ag 2:} \quad \begin{bmatrix} \text{N} \\ \text{fem} \end{bmatrix} + [\text{Adj}] \Rightarrow \begin{bmatrix} \text{N} \\ \text{fem} \end{bmatrix} + \begin{bmatrix} \text{Adj} \\ \text{fem} \end{bmatrix}$$

However, if markedness is assumed, and, for example, if masculine is unmarked, then the lexicon of French will no longer have to specify all nouns and adjectives as being masculine or feminine. Only those that are feminine will be specified as such. That is, all unmarked nouns and adjectives will automatically and redundantly be masculine. As a result Ag 1, which effects masculine agreement, is no longer necessary since its application would be

redundant and vacuous. Only Ag 2 is required for noun-adjective agreement in FRENCH. Consequently the power of variables such as alpha is no longer justified.[16]

An important step in the theory of markedness is the claim that not only is markedness a universal principle of language, but that it is also always the same member of a related set of features that is basic or unmarked in all languages. Universal II tentatively claims this for the features of number and gender. Support for this claim is found in implicational universal 35 proposed by Greenberg: "There is no language in which plural does not have some nonzero allomorphs, whereas singular is expressed only by zero. The dual and the trial is expressed only by zero."[17]

One way of falsifying universal II would be to find a language where either the feminine or the plural are the unmarked members of gender and number. Suggestive of this would be a language where the masculine but not the feminine systematically has surface realization as a morpheme, or where this was the case for singular but not for plural (dual or trial). There appears to be no evidence of the existence of such a language.[18] If indeed there is no such language, then universal II captures an important aspect of natural language, namely that the unmarked features of gender and number are always masculine and singular.

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[16] For a detailed discussion of this, see Delisle,1972, doctoral dissertation, 115 - 119. Also, for examples of the empirical consequences of markedness in syntax, see pp. 113-115.

[17] Greenberg, 1963:112.

[18] It will take more than a superficial and unanalyzed example to falsify this claim. For example, it may be claimed that in SAMOAN, the singular is marked, the plural being unmarked, on the basis of the following:

" 'O se fala 'a mat'. 'o fala 'mats'." (Marsack, 1962: 24)

I see this example as being very similar to the ENGLISH:

'A sheep ran across the road.' and 'Sheep ran across the road.'

Yet I doubt very much that anyone would wish to claim that 'a' is the marked morpheme for the singular and that the plural is unmarked in ENGLISH. It is therefore clear that in order to falsify the claim in question, the necessity of considering the singular (or masculine) as being marked, and the plural (or feminine) as being unmarked will have to be demonstrated.

Returning to the data of GALLINYA (sentences 10) through 13)), a few sample derivations will clarify the application of the principles which have been discussed. Recall that the only required language specific constraint in these derivations is that, under certain circumstances, agreement be optional. (For the sake of clarification, unmarked features are underlined instead of leaving the categories unspecified.)

Derivation 2: namiči sořesa

$$\begin{bmatrix}\underline{\text{masc}}\\ \underline{\text{sing}}\end{bmatrix}\ \begin{bmatrix}\underline{\text{masc}}\\ \underline{\text{sing}}\end{bmatrix}$$

Agreement cannot apply since it can only copy marked features. If it could apply, it would be performing a vacuous operation. In this case this is also true for segmentation and morphophonemics since the items remain unmarked. The result is therefore:

namiči sořesa
'The man is rich.'

Derivation 3: nititin sořesa

$$\begin{bmatrix}\text{fem}\\ \underline{\text{sing}}\end{bmatrix}\ \begin{bmatrix}\underline{\text{masc}}\\ \underline{\text{sing}}\end{bmatrix}$$

If agreement does not apply, the sentence remains unchanged:

nititin sořesa
'The woman is rich.'

If agreement does apply, the following results:

$$\begin{matrix}\text{nititin}\\ \begin{bmatrix}\text{fem}\\ \underline{\text{sing}}\end{bmatrix}\end{matrix}\ \begin{matrix}\text{sořesa}\\ \begin{bmatrix}\text{fem}\\ \underline{\text{sing}}\end{bmatrix}\end{matrix}$$

Segmentation: nititin + fem sořesa + fem

Morphophonemics: nititin sořetida
'The woman is rich.'

Derivation 4: namiči sořesa

$$\begin{bmatrix}\underline{\text{masc}}\\ \text{plur}\end{bmatrix}\ \begin{bmatrix}\underline{\text{masc}}\\ \underline{\text{sing}}\end{bmatrix}$$

If agreement does not apply, then there is no change in the adjective.

Segmentation: namič i + plur soř esa

Morphophonemics: namičon:i soř esa
'The men are rich.'

If agreement does apply, however, then the following results:

namič i soř esa
[masc, plur] [masc, plur]

Segmentation: namič i + plur soř esa + plur

Morphophonemics: namičon:i soř es:ota
'The men are rich.'

Derivation 5: nititin soř esa
[fem, plur] [masc, sing]

If agreement does not apply, then the following is obtained:

Segmentation: nititin + plur soř esa

Morphophonemics: nitit:o:ni soř esa
'The women are rich.'

If agreement does apply, the following results:

nititin soř esa
[fem, plur] [fem, plur]

Segmentation: nititin + plur soř esa + plur

Morphophonemics: nitit:o:ni soř es:ota
'The women are rich.'

It is interesting to note in the derivations just presented that segmentation need not be considered at all. That is, the segmentation line in these derivations could simply be omitted. All that is required is that morphophonemics apply to the specified lexical items adjusting them in accordance with the sub-categorization features which specify those items. Segmentation can then be restricted to a process of node-creation. That is, segmentation can be restricted to apply only to segmental features such as, for example, [art, dem, pron] which are realized as constituent nodes or categories (article, demonstrative, pronoun). This will exclude the rule from applying

to sub-categorization features such as [plur, masc, anim, etc.]. As a consequence of this restriction, an unsatisfactory analysis such as that represented by Derivation 1 will not be possible because segmentation will not be able to apply to subcategorization features. Such a constraint therefore clearly gains support by excluding faulty analyses which could result from the mis-use of segmentation.

In comparing derivations 4 and 5 with each other, the question may be raised as to why in both soŏres:ota results from non-identical feature specifications. In one case, the adjective [fem, plur], and in the other case it is [masc, plur]. Simply, gender is not morphemically represented when the category is specified for plurality in GALLINYA regardless of whether or not the gender feature is marked or unmarked. In derivations 4 and 5, the nouns namiĉon:i and nitit:o:ni contain an overt morpheme for the feature of plurality but not that of gender. This is not unusual.[19] I know of no language that allows morphological representation for all of its underlying features. Yet we know that those features exist as underlying specifications because of other types of manifestations. For example:

14) a. "An elephant is big.

b. An elephant stepped on my car."[20]

In these sentences, 'an elephant' in a. is generic but in b. it is specific. Although both occurrences of 'an elephant' are superficially identical, their underlying specifications must be different since the identity requirement for deletion is not met in the case of coordination reduction, thereby blocking the following sentence:

15) *An elephant is big and stepped on my car.

It is clear from these examples that underlying features do not have to have surface morphological representation.

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[19] This phenomenon appears to correspond to what has been described as synchretization: "By this is meant that distinctions existing in the unmarked member are often neutralized in the marked categories." Greenberg, 1966a: 27.

[20] Chafe, 1967.

4. Syntactic Feature Switching in GALLINYA

It has been argued that sentences 11), 12), and 13) only represent cases of apparent SFS. In fact, if independently motivated universal principles are invoked, these instances of apparent SFS can be reduced to a case involving a language specific constraint requiring that, under certain circumstances, agreement be optional. Such an analysis, drawing heavily on metatheoretical principles, not only constitutes a description of the facts, but in part an explanation of their occurrence.

GALLINYA offers other examples of what may be interpreted as SFS, this time with inanimate nouns. Observe the alternations in the following sentences:[21]

16) mas'afuni {gabagota / gababduda}

books {short (plur, no gender) / short (fem, sing)}

'The books are short.'

17) balbaličon:i {gababota / gababduda}

doors {short (plur, no gender) / short (fem, sing)}

'The doors are short.'

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[21] The native speaker of GALLINYA from whom I obtained this data occasionally waivered in his consistency as to which forms of the adjective were or were not allowed. I also found this to be the case when working on feature switching with native speakers of other languages. Although such inconsistency was occasionally encountered, it is worthwhile noting since it may be reflecting a language area of general instability. All investigated cases of SFS involved language inflection. Concerning the stability of inflections, E. Traugott states: "Different structures in the language are learned at different times; for example, nouns and verbs are learned very early, but inflections like tense (for example, present He walks. versus past He walked.) are learned later and perhaps never become as fully internalized as those language elements learned earlier. The structures that a child learns late tend to change most readily in the history of the language; the form of the inflections is notoriously unstable in all languages." (Traugott, 1972: 9-10). This suggests that SFS is an operation acquired late in the learning of a language. If such a claim is verified and confirmed, then there will be a basis for better understanding the observed inconsistencies.

18) balbalati:n gababduḍa
door short (fem, sing)
'The door is short.'

19) balbaliči gababaḍa
door short (masc, sing)
'The door is short.'

20) namiči gababaḍa
man short (masc, sing)
'The man is short.'

21) nititin gababduḍa
woman short (fem, sing)
'The woman is short.'

Sentences 16) and 17) exemplify what appears to be true SFS. Given an animate and plural noun, the agreeing adjective will either be plural and unspecified for gender or feminine and singular. That is, in the adjective, number is polarized and gender is normalized. The polarization of number is obvious. When the noun is plural, the agreeing adjective may be singular. The normalizing of gender, however, is not as obvious since, in GALLINYA, a noun may arbitrarily change gender categories.[22] This is clearly exemplified by sentences 18) and 19). Inanimate nouns can freely take either masculine or feminine gender, this fact being made clear by sentences 20) and 21) which reflect semantic gender.

Whether or not normalization did indeed take place therefore remains undetermined, given the manner in which GALLINYA inanimate nouns are classified by gender. When the noun is plural, one of the possible alternation is the feminine singular adjective gababduḍa. To claim that normalization

[22] This changing of categories may not be entirely arbitrary. Charles A. Ferguson has pointed out (personal communication) that the same phenomenon is found in AMHARIC where the assigning of the feminine gender to an inanimate object emphasizes its smallness and delicateness in contrast to the masculine which is neutral or emphasizes the object's largeness and strength. This may be the case in GALLINYA and perhaps also in TIGRINYA (to be examined later). In any case, whether or not there is a meaning distinction accompanying the choice of gender for inanimate objects is irrelevant to SFS since this operation takes place only when such objects are plural, gender distinctions being neutralized. In sentences 16) and 17), mas'afuni 'books' and balbaličon:i 'doors' are plural but unspecified for gender.

took place would be to claim that at least some inanimate plural nouns were originally masculine. Looking at singular inanimate nouns, one would expect this to be possible (see sentences 18) and 19)). In the plural, however, there is no way of establishing that this is the case. It could perhaps be argued that all inanimate and plural nouns are necessarily feminine. From this it would follow that the feminine singular adjective, gababduđa, is the result of the optional application of the agreement rule. This, although an attractive argument, can also not be established. Such an argument would furthermore rule out normalization. And if there is no normalization, then there is no SFS (see SFS hypothesis on first pages). It therefore remains to be seen whether sentences 17) through 21) provide evidence for or against SFS.

Judging from the data of 17) through 21), it appears that inanimate nouns in GALLINYA may be considered as undergoing SFS. However, one must assume that, in the plural, these nouns may be specified as being either masculine or feminine. This assumption will now be made in order to test for SFS.

The rule required to account for the alternations found in sentences 16) through 21) could be stated as follows:

SFS 1: $$\begin{bmatrix}\text{NP}\\ \text{inanim}\\ \text{plur}\end{bmatrix} + \text{Adj} \Rightarrow \begin{bmatrix}\text{NP}\\ \text{inanim}\\ \text{plur}\end{bmatrix} + \begin{bmatrix}\text{Adj}\\ \text{fem}\\ \text{sing}\end{bmatrix}$$

SFS 1 will change the gender of an adjective, regardless of its previous specification, to the marked feminine and the unmarked masculine when the agreeing noun is plural and inanimate. Furthermore, in order to account for the data, agreement may now no longer be optional. That is, it will remain optional for animate nouns but not for inanimate nouns. The oddity of this requirement will be discussed later.

The following derivations will clarify the application of the proposed rules:

Derivation 6:

balbaliči	gababađa
masc	masc
sing	sing
inanim	

SFS cannot apply since the noun is not plural.

Agreement cannot apply since the features of the noun are unmarked.

Morphophonemics need not adjust the morphemes since they are in the unmarked form. The output is therefore:

balbaliči gababaḍa
'The door is short.'

Derivation 7: balbaliči gababaḍa

$$\begin{bmatrix}\text{fem}\\ \underline{\text{sing}}\\ \underline{\text{inanim}}\end{bmatrix} \quad \begin{bmatrix}\underline{\text{masc}}\\ \underline{\text{sing}}\end{bmatrix}$$

Although the unmarked form of the noun is masculine, balbalači is specified as feminine because of the arbitrariness of gender. It could as well be masculine.

SFS cannot apply since the noun is not plural.

Agreement: balbaliči gababaḍa

$$\begin{bmatrix}\text{fem}\\ \underline{\text{sing}}\end{bmatrix}$$

Morphophonemics: balbalati:n gababduḍa
'The door is short.'

Derivation 8: balbaliči gababaḍa

$$\begin{bmatrix}\text{fem}\\ \text{plur}\\ \underline{\text{inanim}}\end{bmatrix} \quad \begin{bmatrix}\underline{\text{masc}}\\ \underline{\text{sing}}\end{bmatrix}$$

Note again that it would make no difference in the derivation if balbalači were masculine; the outcome would be the same. The reason for this is that gender is normalized by SFS.

SFS applies: balbaliči gababaḍa

$$\begin{bmatrix}\text{fem}\\ \underline{\text{sing}}\end{bmatrix}$$

Agreement takes place: balbaliči gababaḍa

$$\begin{bmatrix}\text{fem}\\ \text{plur}\end{bmatrix}$$

Morphophonemics: balbaličon:i gababota
'The doors are short.'

Derivation 9: This derivation is the same as derivation 8 but with agreement applying after SFS. This will demonstrate that the rules need not be ordered with respect to each other.[23] Note the outcome:

	balbaliči	gababaḍa
	[fem, plur]	[masc, sing]
Agreement:	balbaliči	gababaḍa
		[fem, plur]
SFS:	balbaliči	gababaḍa
		[fem, sing]

Morphophonemics: balbaličon:i gababduḍa
'The doors are short.'

It is by means of unordered rule application that the two alternations of sentence 17), balbaličon:i gababota or gababduḍa are obtained. This requires that SFS perform a 'de-marking' operation on the number of gababaḍa [fem, plur] such that is become specified as: [fem, sing] [see derivation 9). Such an operation is contrary to what SFS performs when it applies before agreement. Then it simply 'marks' gender (see derivation 8 where gababaḍa masc, sing] becomes specified as [fem, sing] as a result of the application of SFS). That is, in derivations 8 and 9, SFS 1 performs very different operations in terms of the basic feature values argued for on the basis of markedness (recall sentences 10) through 13)). In fact, if gababduḍa, as generated in derivation 9, could be obtained in some other way, then SFS 1 could be defined in a manner which is more concurrent with markedness principles. In such a case, it could be defined as simply changing the unmarked gender of an adjective to the marked gender, this resulting in the adjective being specified as [fem] and remaining [sing] [see SFS 1). However, there remains the problem of obtaining gababduḍa as in derivation 9. This approach will again be taken up when considering the marking hypothesis.

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[23] Although I will not take up the issue of rule ordering, I will normally assume that rules are not extrinsically ordered. For a discussion of extrinsic and intrinsic rule ordering, see Koutsoudas, 1971.

Various other questions may be raised about derivations 6 through 9. One such question could be: why not have SFS apply to the noun instead of the adjective and then let agreement apply? This simply does not account for the data. Even if one allows for extrinsically ordered rules, ungrammatical sentences result. If SFS took place on the noun and if the rules were unordered, agreement could apply before SFS. The result could be as follows:

Derivation 10:	balbaliči [masc, plur, inanim]	gabalaḍa [masc, sing]
Agreement:	balbaliči	gababaḍa [masc, plur]
SFS:	balbaliči [fem, sing, inanim]	gababaḍa

Morphophonemics: *balbalati:n gababota

Even if one imposes an extrinsic ordering such that SFS precedes agreement, ungrammatical data is derived:

Derivation 11:	balbaliči [masc, plur, inanim]	gababaḍa [masc, sing]
SFS:	balbaliči [fem, sing, inanim]	gababaḍa
Agreement:	balbaliči [fem, sing, inanim]	gababaḍa [fem, sing]

Morphophonemics: *balbalati:n gababduḍa

This sentence is grammatical only in the singular and not when its meaning is plural. Derivation 11 would lead us to believe that 'the doors are short' and 'the doors is short' are homophonous in GALLINYA. It can be seen

from sentences 17), 18) and 19) that this is clearly not the case. Since this approach does not account for the data, it must therefore be discarded.

Another question may be raised: Why not have feature switching apply to the adjective but before lexicalization since this would allow sentences 16) and 17) to be generated in the same way as were sentences 11), 12), and 13)? If one assumes pre-lexicalization SFS, then the unmarked adjective will always be gabaduda (feminine, singular) at the time transformations applied. If agreement remained optional, as was required for sentences 11), 12), and 13), then sentences 16) and 17) would automatically result. When agreement takes place, the plural adjective gababota will be obtained. If agreement does not take place, the adjective will remain feminine singular, this yielding gabaduda. Sentence 18) can also be obtained since agreement will apply vacuously. The problem, however, arises with sentence 19). If agreement (being optional) does not apply, the result will be an ungrammatical sentence:

22) *balbaliči gababduda
'The door is short.'

This is one area in which sentences 17) through 19) differ from sentences 10) through 13) (Compare sentence 11) which allows non-standard agreement, with sentences 18) and 19) which do not.) In order to obtain sentence 19), balbaliči gababada and yet block sentence 22) *balbaliči gababduda, one would have to claim that the agreement rule must obligatorily apply when the noun is masculine singular, but not elsewhere. This is tantamount to saying that the fact that sentence 19) exists and sentence 22) does not is an exception and an unpredictable fact of GALLINYA. Such an analysis is therefore clearly ad hoc.

5. The marking hypothesis

At this point, I would like to investigate the function of SFS in language. This presently cannot be discussed in other than functional terms. What will be suggested, although at the moment speculative, will be followed by a more formal presentation and defense. The principles advanced will then be tested on new data as well as on data already examined.

It may be possible to view SFS as a phenomenon of 'marking' or 'information signalling'. In CHIPPEWA, SFS draws attention to the NP that functions as object. Without this marking, subject and object functions would be confused in this restricted situation. In ARABIC, attention is drawn to the fact that the subject noun phrase is non-enumeratively plural. In GALLINYA, SFS signals that the subject noun phrase is inanimate and plural. All of these appear to have in common the fact that they use a device, namely SFS, to give surface representation to a feature or features which would otherwise not be realized in the surface structure. That is, SFS appears to be a device that a language uses to signal information for which it has no morphemic representation.

If indeed SFS is a marking, then one would expect that it may be related to markedness. If this is the case, then marking would involve an operation on that value of a feature which is unmarked. Marking could be viewed as an operation which changes the value of an unmarked feature to its marked value. This could be accomplished by a feature adding transformation. For example, it has already been suggested that adjectives are universally and redundantly specified as being [masc, sing]. To mark such an adjective for both gender and number would require a transformation which would add the features [fem, plur] to the adjective in question. The unmarked features would then automatically be deleted leaving the adjective specified for marked features.[24]

The question then remains whether marking is a reasonable hypothesis capable of accounting for various types of non-standard agreement. In order to establish its feasibility, consider a case where a language, under restricted circumstances, lacked the apparatus to specify certain relations or to represent certain information. How could it, under those special conditions, represent that information? Is it not feasible that under those

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[24] The universal convention which deletes unmarked features in the event of a clash is the same as that required for agreement. Recall that when agreement copies a marked feature on a node, the corresponding unmarked feature of that node is automatically deleted (see previous discussion on universal III).

circumstances, all languages can draw on a principle for representing that information? If this is the case, that principle will be universal in the same way that, for instance, agreement is universal. That is, given the circumstances discussed, what a language may or may not do will de defined by the universal principle in question.

The situation just discussed appears to arise in the languages thus far examined. CHIPPEWA, in a very restricted situation, does not have the necessary apparatus to distinguish subject and object relations without resorting to what has been described as being SFS. Similarly, without SFS, ARABIC cannot draw attention to a non-enumerative plural subject. GALLINYA also cannot represent the fact that the subject, when plural, is inanimate without resorting to SFS since there are no overt animate-inanimate morphemes in GALLINYA. Under such circumstances, it appears to be possible for a language to perform a marking operation on those features which do have surface representation in order to signal a distinction which is otherwise not representable in that language. That is, under certain conditions, it appears possible for a language to mark specific features of a specific category. Furthermore, since those features always appear to be the same ones, those of gender and number, all that a language need do is call upon a marking operation. The marking operation, being universal, will then always effect the same changes.

Consider the notion of marking, for a moment, from a purely theoretical point of view. It has been argued that all instances of neutralization can be universally viewed as being cases of feature deletion given simplex features and markedness.[25] That is, if two related features X and Y form a set Z, and if X is unmarked, then the neutralization of the set Z can only result in X by the deletion of Y. For example, if voiced and voiceless are the two members of a voicing set of features, then the neutralization (i.e. deletion) of voicing will always result in the representation of the unmarked category.[26]

[25] For a discussion of this, see Sanders, 1972.

[26] Greenberg, 1966b: 63 notes: "Although, in principle, no doubt, neutralization is viewed as a phenomenon specific to each language, one cannot help noting that in different languages it is generally the same category which appears in the position of neutralization."

This is clearly seen in the well-known GERMAN bund-bunt example where voicing in the final segment is neutralized, this resulting in both d and t being voiceless. If the theory of grammar, in this case more specifically the theories of markedness and simplex features, allow for such a characterization of neutralization, then what basis is there for excluding its characterizing a very similar operation, namely marking? There is presently no valid reason for constraining the theory of grammar to exclude marking, given the existence of neutralization. In fact, since the theory allows for neutralization and markedness, and, since neutralization is a well-attested phenomenon, one would also expect to find evidence of marking. Neutralization is brought about by a feature deleting transformation; marking is achieved by a feature adding transformation.

Recall, as was earlier proposed, that masculine and animate are the unmarked features of gender, and that singular is the unmarked feature of number. In the place of the SFS hypothesis, we will now formally advance the marking hypothesis. The marking hypothesis will be as follows:

a. Marking will operate on paired sets of features changing the value of the feature operated upon to that of the marked state.

b. Marking will only apply to the features of gender and/or number. But if number undergoes marking, then so will gender.[27]

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[27] The principle that governs this ordering may possibly be based on the ranking of feature sets. It has been argued that in feature sets consisting of three or more members, higher ranking implies more marked (i.e. less basic) (see Delisle, 1972, doctoral dissertation). Note, however, that this deals with ranking internal to feature sets and not of feature sets themselves. It may nevertheless be the case that feature sets are ranked with respect to each other. If this is the case, then there is a principled way of accounting for the discussed ordering. That is, if number is less marked (i.e. lower ranked) than gender, and since marking is restricted to operating on these two sets of features, it would not be surprising to find that marking must apply to the most marked (i.e. highest ranked) feature first, namely gender. Universal 36, advanced by Greenberg, appears to support the assumption that number is more basic (i.e. lower ranked) than gender: "If a language has a category of gender, it always has the category of number." (Greenberg, 1963:112).

The marking hypothesis is defined on universal principles (markedness and simplex features), and as itself advanced as being universal. Part b. of the hypothesis restricts marking to the features of number and gender. This differs from a. of the SFS hypothesis in that the 'simultaneous' condition is dropped and an ordering (or ranking) restriction is placed on gender and number. Marking is restricted to applying to gender alone, or to both gender and number. Part a. of the hypothesis states what will be the operation performed by marking. It will mark one or both of the features of gender and number.[28]

The marking hypothesis has definite advantages over the SFS hypothesis since it is principle derived and requires no addition of power to the theory of grammar. Being principle derived, marking has explanatory power, which is not the case with the SFS hypothesis.[29] Another problem with the SFS hypothesis is that it left the operation of normalization totally unexplained. The direction of normalization, whether to the masculine or feminine, or to the singular or plural, could not be predicted. There was no way of knowing which of the two related features would become normal or standard, which is a serious deficiency in any hypothesis that is to have explanatory power. Marking furthermore supports the claim that agreement, under restricted circumstances, is optional in some languages. The claim that agreement is optional, it has already been argued and will further be demonstrated, is motivated independently of marking (see the analysis of sentences 10) through 13) for an example of this). Marking, unlike SFS, may no longer be considered as being an optional operation (the reason for this will shortly be discussed).

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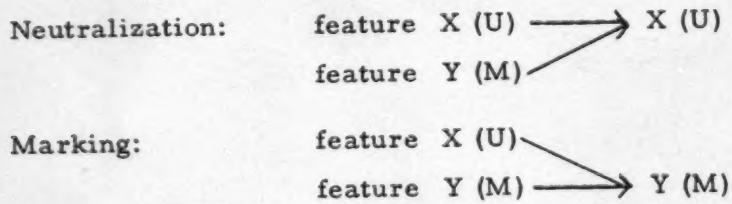
[28] Nothing is said as to the categories to which marking may apply. These appear to be those of noun, adjective, and verb. This will again be discussed.

[29] This principle of scientific explanation is summarized by E. Moravcsik: "A fact is taken to be explained if it follows from a general statement from which other facts can also be derived: the more additional facts that can be derived from that generalization, the better explained the fact is." (WPLU No. 5, A2). For additional discussion on this type of explanation, see Chomsky, 1965: 18-37, and also Sanders, 1967, Section 1.

When the language specific circumstances for marking are met, it must take place. This, it will be seen, results in certain predictable types of alternations when agreement is optional (see data of ARABIC and GALLINYA). When agreement is obligatory, the result is a predictable surface marking which often appears to contradict what is known to be inherently true of the category being marked (see the data of CHIPPEWA). All such cases of non-standard concord, it will be argued, can be explained by marking and/or an optionality (or other) condition on Rule III, a universal agreement rule. The data on non-standard agreement does not justify the introduction of new power into the theory of grammar nor does it justify the modification of the well-attested and traditional view of agreement (see Universal III).

Another consequence of adopting the marking hypothesis instead of the SFS hypothesis is that it can be universally characterized in a manner similar to the phenomenon of neutralization. Given simplex features, neutralization can be characterized as a process of feature deletion.[30] Sanders demonstrates the following: "For theories that incorporate the simplex-feature hypothesis, on the other hand, the process of final devoicing and final voicing are instances of different elementary transformations, and the differential exclusion of the latter process can be effected quite naturally by means of a universal element-independent constraint on the elementary transformation of which it is an instance."[31] The operation of marking is related to markedness in very much the same way that neutralization is related to markedness.



[30] For a discussion of this, see Sanders, 1972, and also Delisle, 1972, doctoral dissertation, 116-118.

[31] See Sanders, 1972:15, on the simplex feature hypothesis.

In both instances, X is the unmarked feature and is therefore universally and redundantly specified. That is, any category which is not specified for Y will automatically be specified for X. This now allows neutralization to be universally stated as resulting from a deletion transformation, and similarly, marking as universally resulting from an addition transformation:

Neutralization: $Y \longrightarrow \emptyset$

Marking: $\emptyset \longrightarrow Y$

In the case of neutralization, a marked feature is deleted, the result being an unmarked feature. An example of this is the GERMAN bund-bunt where there is neutralization of voicing in the final segment. The marked voicing feature specifying the final segment 'd' is deleted leaving that segment unmarked and therefore voiceless. Neutralization is always toward the unmarked state. Given the parallel between neutralization and marking, it may likewise be claimed that marking will always be toward the marked state, this being universally characterized as a process of feature addition.

To my knowledge it has always been assumed that neutralization (at least in syntax) is an obligatory operation. The same assumption will be made for marking, a not too surprising fact given their close relationship. Both, neutralization and marking, perform a value changing operation on features (i.e. addition and deletion). It appears that there may be a meta-theoretical constraint specifying that all value changing rules may never be optional. This does not seem unreasonable as a hypothesis constraining what such rules may or may not do.

6. The verification of marking

A new aspect of markedness, that of marking, has been shown to be theoretically probable. The predictions made by the marking hypothesis now require empirical verification. We will therefore turn to the familiar data of GALLINYA as well as to that of ARABIC and CHIPPEWA. Afterwards, the marking hypothesis will further be tested by examining its consequences in other languages where non-standard concord is found.

Returning to the data of GALLINYA, it should soon be clear how the apparently conflicting agreement forms are the result of marking and optional agreement. As before, sentences 10) through 13) can be accounted for by placing a language specific constraint on agreement allowing this operation to be optional. Then, given that masculine and singular are the unmarked features of gender and number, the alternations found in sentences 11), 12), and 13) become possible.

Sentences 17) through 21) of GALLINYA, however, require additional language specific constraints. These are first, that an adjective be marked for one feature in the environment of a plural and inanimate noun phrase[32] (same structural description as for rule SFS 1), and second, that agreement, in the case of inanimate noun phrases, be constrained to optionally apply to such noun phrases only when they are plural. (Note that this was also the case for animate noun phrases such as in sentences 11) through 13).) Elsewhere agreement is obligatory. Sentences 17) through 21) are then obtained and all other ungrammatical sentences (for example, 22)) are excluded.

The following sample derivations will help clarify the application of marking:

Derivation 12:

nititin	sořěsa
[fem, sing]	[masc, sing]

Marking cannot apply since the noun phrase is animate.

Agreement can optionally apply. If it does not apply, then the following is obtained:

nititin sořěsa
'The woman is rich.'

If agreement does not apply, then the following results:

nititin	sořěsa
[fem, sing]	[fem, sing]

[32] The number of features for which a category is to be marked is also required as language specific information. Because of part b. of the marking hypothesis, if only one feature is marked, it will necessarily be that of gender; if two features are marked, then the features will necessarily be those of gender and number.

Morphophonemics: nititin soŕetida
'The woman is rich.'

Derivation 13: namiči soŕesa
[masc, plur, anim] [masc, sing]

Marking cannot apply since the noun phrase is animate.

Agreement can optionally apply. Assume that it does not apply and note the sentence that is obtained.

Morphophonemics: namičon:i soŕesa
'The men are rich.'

Now assume that agreement does apply at that point where it optionally did not apply earlier in the derivation, and note the resulting sentence:

Agreement: namiči soŕesa
[masc, plur] [masc, plur]

Morphophonemics: namičon:i soŕes:ota
'The men are rich.'

Derivation 14: balbalati:n gababaḑa
[fem, sing, inanim] [masc, sing]

Recall that, in GALLINYA, an inanimate noun is arbitrarily masculine or feminine. In this case it could as well be balbaliči [masc], as balbalati:n [fem].

Marking cannot apply because the noun, although inanimate, is not plural.

Agreement must apply because the noun is inanimate and singular (see earlier stated language specific conditions).

balbalati:n gababaḑa
[fem, sing, inanim] [fem, sing]

Morphophonemics: balbaličon:i gababduḑa
'The doors are short.'

Derivation 15: balbalati:n gababaḍa
[fem, plur, inanim] [masc, sing]

Marking can and must apply. (Recall that marking, as is the case with neutralization, cannot be optional.)

balbalati:n gababaḍa
[fem, sing]

Agreement is optional because the noun is inanimate and plural (see conditions). If agreement does not apply, then the following results:

Morphophonemics: balbaliČon:i gababduḍa
'The doors are short.'

If agreement does apply, then the following is obtained:

balbalati:n gababaḍa
[fem, plur, inanim] [fem, plur]

Morphophonemics: balbaliČon:i gababota
'The doors are short.'

Derivation 16: This derivation will be of the same basic sentence presented in derivation 15, but with marking and agreement reversed in order of application. If the output is grammatical, then marking and agreement will be considered as unordered with respect to each other.

balbalati:n gababaḍa
[fem, plur, inanim] [masc, sing]

Assume that agreement, being optional in this case, does not apply.

Marking then applies: balbalati:n gababaḍa
[fem, sing]

Morphophonemics: balbaliČoni gababduda
'The doors are short.'

Now assume that agreement does apply at that point where it optionally did not apply:

balbalati:n gababaḍa
[fem, plur, inanim] [fem, plur]

Marking must apply since the required conditions are met. However, since the adjective is already marked as a result of agreement, marking applies vacuously. No change results.

Morphophonemics: balbaličon:i gababota
'The doors are short.'

Both outputs are grammatical, all ungrammatical outputs being excluded. Marking and agreement are therefore unordered with respect to each other in GALLINYA.

At this point an objection may be raised concerning the present analysis of the data of GALLINYA. It may be argued that given the fact that only limited evidence has been presented in favor of masculine as being the unmarked feature of gender, the data of GALLINYA could perhaps be more intuitively accounted for by positing the feminine as being the unmarked feature. In such a case the plural and feminine singular alternations found in sentences 16) and 17) would simply be the result of optional agreement. This is true. However, what of the alternations found in sentences 11), 12), and 13) where the masculine singular adjective occurs as one of the alternations? Even if feminine is considered as being the unmarked feature, marking is still required. When a noun is animate, marking the adjective (in this case, making it masculine) will be necessary. Nothing has been gained. In fact something has been lost. Marking and neutralization are no longer as extensively predictable as they were before. All grammars must now state as language-specific information which member of a related set of features is basic or unmarked. This, as was earlier discussed, would not only unnecessarily weaken the predictive power of grammar, but also would not account for an apparent fact of language, namely that masculine is basic.[33]

It has been argued that the direction of neutralization will always be toward the unmarked feature.[34] If the unmarked feature of a set (gender,

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[33] This definitely appears to be the case for paired sets of features. Whether it is also true for gender when this set consists of more than two members has not clearly been established. For number, a feature set which can consist of as many as four members, and for person, a feature set always consisting of three members, it has been argued that the singular and the third person are the unmarked members. For a discussion of this, see Delisle, 1972, doctoral dissertation.

[34] See the earlier discussion on this. Also, see Sanders, 1972, Greenberg, 1966a, and Delisle, 1972, doctoral dissertation.

number, etc.) is always the same feature in all languages, then not only the direction of neutralization but the very feature resulting from the neutralization of that set is predictable.[35] Marking, closely paralleling neutralization and being based on the same principles, would therefore also be weakened as a universal hypothesis if limited to only that of directionality. However, if we can not only predict that marking is an operation changing a feature from an unmarked state to a marked state (the opposite of neutralization), but also the very feature which will result from this marking operation, then the claim is much stronger. As long as evidence contrary to such a claim is not clearly established, the stronger claim will be maintained.

We will now re-examine the data of ARABIC in order to see if the marking hypothesis can adequately account for it. In ARABIC when a subject noun phrase is animate, plural, and non-enumerative, the verb is marked for one feature. Furthermore, given those same circumstances, agreement is optional (this will again be discussed). The following derivations are then possible: (Any occurence of the feature [plur] in these derivations will represent a non-enumerative plural.)

Derivation 17: il raagil gih
[masc, sing] [masc, sing]

Marking cannot apply since the noun phrase is singular.

Agreement cannot apply since all of the agreement features are unmarked.

Morphophonemics applies vacuously.

il raagil gih
'The men came.'

Derivation 18: il sit gih
[fem, sing] [masc, sing]

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[35] Evidence for this comes from both phonology and syntax. In phonology, for example, the neutralization of a voiced-voiceless segment will always result in a voiceless segment. Similarly, in syntax, the neutralization of gender in a category specified by both masculine and feminine will always result in its being masculine. For examples of this, see Sanders, 1972; Greenberg, 1966a; and Delisle, 1972, doctoral dissertation.

Marking cannot apply since the noun phrase is singular.

Agreement must apply:

il sit gih
[fem, sing] [fem, sing]

Morphophonemics: il sit gat
'The woman came.'

Derivation 19: il raagil gih
[masc, plur] [masc, sing]

Marking applies: il raagil gih
[fem, sing]

Agreement is optional. Assume that it does not apply.

Morphophonemics: il riggaala gat
'The men came.'

Now assume that agreement does apply at that point where it was optional.

il raagil gih
[masc, plur] [masc, plur]

Morphophonemics: il riggaala gom
'The men came.'

Derivation 20: This will be the same as derivation 19, but with marking and agreement applying in reversed order to demonstrate that these rules need not be extrinsically ordered.

il raagil gih
[masc, plur] [masc, sing]

Assume that agreement does not apply.

Marking must apply.

il raagil gih
[fem, sing]

Morphophonemics: il riggaala gat
'The men came.'

Now assume that agreement did take place where it chose not to apply before.

il raagil gih
[masc plur] [masc plur]

Marking must apply. Note that only gender is marked.

il raagil gih
[fem plur]

Morphophonemics: il riggaala gom
'The men case.'

It is clear that the data of ARABIC can be accounted for by the marking hypothesis. One aspect of the solution remains troublesome, however. This is that in a marking solution, agreement must be optional, while in a SFS solution this was not the case since optionality was on the SFS rule itself. There is no trade-off involved since in either case, one of the rules has to be optional. But if one of these solutions makes valid claims, then independent evidence favoring that solution over the other should exist. Such empirical evidence will either confirm or disconfirm what has earlier been proposed, namely that marking, being principle-derived, is the better solution.

There is a clear way of obtaining additional confirmation for the analysis involving marking. This involves demonstrating that agreement must be optional in cases which are independent of those which involve marking. If this can be done, then there will be independent evidence for optional agreement in Arabic. The optionality condition will not have been established solely to account for the data involving the marking analysis.

The following quotation reveals the type of information that we need: "A verb followed by an indefinite feminine or plural noun subject does not necessarily agree with that subject but may remain in the masculine form: wəṣel bənāt (or wəṣlu bənāt) 'Some girls arrived.'; wəṣel bənt (or

wəṣlet bənt) 'A girl arrived.' "[36] In this case, when the indefinite feminine or plural noun subject follows the verb, agreement is optional. Note that this is a case of optionality and not of marking since when agreement does not take place, the verb is completely unmarked, namely masculine and singular. When marking does take place (under different circumstances), then the form alternating with the plural is the feminine singular: "l-krafatāt bəl-wāžha ləftet (or lafatu) naẓari"[37] Clearly, agreement in Arabic must be optional, this being based on grounds independent of those involving the marking analysis.

Turning to CHIPPEWA, let us now see if marking can account for the facts encountered in that language. In CHIPPEWA marking takes place on the object of a third person animate subject, verb, third person animate object construction. In addition, not only one but two features are marked. Marking therefore necessarily applies to both number and gender. Agreement is furthermore obligatory in CHIPPEWA. Given these language-specific conditions, the following derivations result:

Derivation 21: nīn ni + wābam + o a'aw ikwe

$$\begin{bmatrix} 1 \\ \text{anim} \\ \text{sing} \end{bmatrix} \begin{bmatrix} 1 \\ \text{anim} \\ \text{sing} \end{bmatrix} \qquad \begin{bmatrix} 3 \\ \text{anim} \\ \text{sing} \end{bmatrix} \begin{bmatrix} \text{anim} \\ \text{sing} \end{bmatrix} \begin{bmatrix} 3 \\ \text{anim} \\ \text{sing} \end{bmatrix}$$

(The categories are: pron pron + verb + pron demonstrative noun)

Marking cannot apply since both the subject and the object are not third persons.

Agreement cannot apply since all features are unmarked (recall that it only applies to marked features (see universal III)).

Morphophonemics: nīn niwābamā a'aw ikwe

'I see that woman.'

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[36] See Cowell, 1964: 421. Since I no longer have direct access to the CAIRO ARABIC speaker from whom sentences 1) through 5) were obtained, I had to resort to another source for data. The ARABIC dialect that I worked with appears to be very similar to the dialect which Cowell cites since, as will shortly be seen, both undergo marking under similar circumstances.

[37] See Cowell, 1964: 424. (ləftet is fem, sing, and lafatu is plur, no gender.)

Derivation 22:

nīn	ni	+ wābam +	o	a'aw	kiwe
[1 anim sing]	[1 anim sing]		[3 anim sing]	[anim sing]	[3 anim sing]

Marking cannot apply.

Agreement applies:

nīn	ni + wābam +	o	a'aw	ikwe
		[3 anim plur]	[anim plur]	[3 anim plur]

Morphophonemics 1: nīn ni + wābam + o + ag a'aw + ag ikwe + ag

Morphophonemics 2: nīn niwābamāg ingiw ikwewag

Derivation 23:

wīn	o + wābam +	o	a'aw	ikwe
[3 anim sing]	[3 anim sing]	[3 anim sing]	[anim sing]	[3 anim sing]

Marking must apply:

wīn	o + wābam +	o	a'aw	ikwe
				[3 inanim plur]

Agreement applies:

wīn	o + wābam +	o	a'aw	ikwe
		[3 inanim plur]	[inanim plur]	[3 inanim plur]

Morphophonemics 1: wīn o + wābam + o + an a'aw + an ikwe + an

Morphophonemics 2: wīn owābamān iniw ikwewan

'He sees that/those woman/women.'

Note that although the object is animate and singular in the deep structure, it is inanimate and plural in the surface structure. Yet the interpretation is ambiguously singular or plural. The reason for this ambiguity is that an underlying inanimate and plural object as well as an underlying animate and plural object both yield an inanimate and plural surface output. Observe this in derivation 24:

Derivation 24:

wīn	o + wābam +	o	a'aw	ikwe
[3 anim sing]	[3 anim sing]	[3 anim sing]	[anim sing]	[3 anim plur]

Marking applies: wīn o + wābam + o a'aw ikwe
[3 inanim plur]

Agreement applies: wīn o + wābam + o a'aw ikwe
[3 inanim plur] [inanim plur] [3 inanim plur]

Morphophonemics 1: wīn o + wābam + o + an a'aw + an ikwe + an

Morphophonemics 2: wīn owābamān iniw ikwewan

'He sees that/those woman/women.'[38]

It is clear from these derivations that the data of CHIPPEWA is correctly predicted by the marking hypothesis. Equally important is that no ungrammatical data is generated. Given the formal universals thus far proposed, apparently strange non-standard concords become analyzable with minimal language-specific information. In all languages that undergo marking, such language specific information constitutes a statement of the conditions under which marking takes place and also of the extent or degree of marking required.

At this point, after having derived non-standard concords in GALLINYA, ARABIC, and CHIPPEWA, another aspect of the marking hypothesis may be considered. This has to do with the type of categories to which marking can apply. In GALLINYA, marking applied to an adjective, in CHIPPEWA to a noun, and in ARABIC to a verb. The question is then whether marking can be restricted to apply only to nouns. If not, what is its scope?

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[38] In derivations 23) and 24), extrinsic rule ordering appears to be needed. Marking must precede agreement if ungrammatical data is to be avoided. The only obvious way out of having extrinsic ordering is to allow rules to apply as long as the conditions for their application are met, this not being a new notion. If this is assumed, then extrinsic ordering is no longer necessary. For example, agreement may apply first, then marking next, this resulting in what would be an ungrammatical sentence. But if agreement re-applies after marking, then the result is a grammatical sentence. Neither marking nor agreement can continue re-applying at this point since all applications would be vacuous.

The first question can be answered by demonstrating that if marking only applies to nouns, ungrammatical data results. Consider for a moment derivations 15 and 16 where, in GALLINYA, the adjective is marked. Now assume that marking applies to nouns only and observe what happens in derivations 15A and 16A. (Derivations 15A and 16A correspond to derivations 15 and 16 respectively.)

Derivation 15A: balbalati:n [fem, plur, inanim] gababaḍa [masc, sing]

Marking applies: balbalati:n [fem, sing, inanim] gababaḍa

Agreement is optional. If it does not apply, then the result is a masculine singular adjective agreeing with a feminine singular noun which was originally specified as being plural. The output is clearly ungrammatical.

Morphophonemics: *balbalati:n gababaḍa

Now assume that agreement applies:

balbalati:n gababaḍa [fem, sing]

Morphophonemics: *balbalati:n gababduḍa

In this case the output is grammatical but the meaning correspondence is lost. That is, what was originally specified as plural ends up as singular. Such analysis therefore excludes sentence 17) balbaličon:i gababota or gababduḍa, 'The doors are short.', which is perfectly acceptable in GALLINYA.

Derivation 16A: This derivation will show that marking may not apply to the noun in GALLINYA even if one reverses the order of application of marking and agreement. This suggests extrinsic ordering, a notion which has not been established as necessary in grammar.

balbalati:n [fem, plur, inanim] gababaḍa [masc, sing]

Agreement can apply. Assume it does not.

Marking applies: balbalati:n gababaḍa
[fem, sing, inanim]

Morphophonemics: *balbalati:n gababaḍa

The result is the same type of ungrammaticality as before. Now return to that point in the derivation where agreement did not apply and assume that it does apply:

balbalati:n gababaḍa
[fem, plur, inanim] [fem, plur]

Marking applies but the application is vacuous since number and gender on the noun are already in a marked state.

Morphophonemics: balbaliči:n gababota
'The doors are short.'

The output is grammatical only if agreement is obligatory. But marking serves no purpose in this case since the application is vacuous. Furthermore, the grammatical but non-standard sentence, balbaliči:n gababduda 'The doors are short.' (see sentence 17)) is excluded. An analysis allowing only for the marking of nouns is therefore clearly inadequate.

The solution, although not very satisfying, is to tentatively restrict marking to the categories of noun, adjective, and verb as the data suggests. This is not satisfying since there is no principled way of inferring that this will be the case. Such an inference could be made, for example, if it could be demonstrated that, in the deep structure, nouns, adjectives, and verbs are all deriveable from the same category.[39] There is, however, little support for this claim and the tentative constraint on marking, restricting its application to nouns, verbs, and adjectives, will have to presently remain without theoretical support.

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[39] Ross, as well as others, have suggested that adjectives and nouns are related in this way: "Recent research into the nature of underlying syntactic structure by Paul Postal and George Lakoff has indicated that the parts of speech which have traditionally been called verbs and adjectives should really be looked upon as two subcategories of a major lexical category, predicate." (Ross, 1966: 352).

Turning to SOMALI, we again find non-standard types of agreement. The question is whether or not such agreement types can be accounted for by the marking hypothesis. The predictions are that under certain language-specific conditions, gender and perhaps also number will be marked. Furthermore, it is also predicted that if feature alternations occur, these resulting in non-standard concords, such alternations will be the result of an optionality constraint on agreement.

Consider the following data of SOMALI:[40]

23) niŋkan waderyahei
'This man is tall (masc, sing).'

24) nagtan wadertahai
'This woman is tall (fem, sing).'

25) nimaŋkan waderyihin
'These men are tall (plur, no gender).'

26) nagahan waderyihin
'These women are tall (plur, no gender).'

Now observe what happens when a numeral is introduced thereby making the construction enumerative:

27) šantan nin {waderyihin / wadertahai}
'These five men are {tall (plur, no gender). / tall (fem, sing).}'

28) šantan nagod {waderyihin / wadertahai}
'These five women are {tall (plur, no gender). / tall (fem, sing).}'

Note, however, that this phenomenon is restricted to animate nouns. Inanimate nouns do not allow for the observed agreement alternations:

29) šantan kursi waderyihin
*šantan kursi wadertahai
'These five chairs are tall.'

From the data just presented, it can be inferred that marking of gender in SOMALI takes place when the noun is animate, plural, and enumerative. Under those conditions, the predicate adjective is marked. If adjective-noun

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[40] I am thankful to Saeed Jama, a native speaker of SOMALI, for this data.

agreement takes place, the adjective remains marked for feminine, this resulting in wadertahai. The rules need not be ordered and no ungrammatical data is generated. The analysis is as that of ARABIC, the only difference being in the language-specific conditions.

It is once again obvious that marking can account for the data examined. According to the proposed hypothesis, it is crucial that it be agreement that is optional and not marking. Independent support for the claim that agreement is optional in SOMALI is found in the following:

30) šan {nag / nagod}

'five {woman / women}'

An animate noun following a numeral may optionally be singular or plural depending upon whether or not there is agreement between that numeral and noun.

Optional agreement in enumerative constructions is not a rare phenomenon and its common occurrence brings additional confirmation to the claim that, in many languages, an optionality condition must be allowed on agreement. In a paper dealing with agreement, E. Moravcsik states: "After numerated nouns, either singular or plural verb forms may be used in AMHARIC ... and in OLD ASSYRIAN ... and only singular verb forms in (present-day) HUNGARIAN."[41] This last type of restriction (as in HUNGARIAN), where in certain cases not only is agreement optional but simply not allowed, is also found in some dialects of BLACK ENGLISH, sentences such as 'Ten boy came.' are perfectly grammatical.[42] The above evidence therefore indicates the necessity of allowing an optionality condition on the agreement rule and, in some cases, of completely excluding the application of that rule.

A crucial aspect of the marking hypothesis is that agreement alternations are accounted for by an optionality condition on the agreement rule. I will

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[41] See Moravcsik, WPLU No. 5, A17 and also footnote 46.

[42] See Traugott, 1972: 16.

now examine data from TIGRINYA which further exemplifies this point. It will be shown that so-called odd facts of agreement in TIGRINYA are a direct consequence of an optionality condition on agreement. In the following data, note how both the demonstrative and the verb agree with the noun:[43]

31) əti sab?ai wadiX?u
that (masc, sing) man fell (masc, sing)
'That man fell.'

32) əta sabeti wadiX?a
that (fem, sing) woman fell (fem, sing)
'That woman fell.'

33) ətom sab?ut wadiX?um
those (masc, plur) men fell (masc, plur)
'Those men fell.'

34) ətan anesti wadiX?an
those (fem, plur) women fell (fem, plur)
'Those women fell.'

In TIGRINYA, as was the case in GALLINYA, an inanimate object can freely be categorized by either of the two gender categories available. That is, an inanimate object can optionally be masculine or feminine.

35) əta t?ărabeza wadiX?a
that (fem, sing) table (sing, no gender) fell (fem, sing)
'That table fell.'

36) əti t?ărabeza wadiX?u
that (masc, sing) table (sing, no gender) fell (masc, sing)
'That table fell.'

Of interest, however, are the alternations found when the noun is inanimate and plural:

37) ətan t?ărabezatat wadiX?an
those (fem, plur) tables (plur, no gender) fell (fem, plur)

but not

38) *ətom t?ărabezatat wadiX?um
those (masc, plur) tables (plur, no gender) fell (masc, plur)

However, also

39) əti t?ărabezatat wadiX?u
those (masc, sing) tables (plur, no gender) fell (masc, sing)

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[43] I am grateful to Mrs. Fedaku Beyene, a native speaker of TIGRINYA, for this data.

but not

40) *əta t?ăarabezatat wadiX?a
those (fem, sing) tables (plur, no gender) fell (fem, sing)

The only two grammatical forms allowed are those with either a feminine plural or masculine singular demonstrative and verb. Without the marking hypothesis, this is clearly a strange and puzzling phenomenon.

Invoking the already justified principle of marking, it will be seen that the data of TIGRINYA no longer remains odd and anomalous. It should be clear that the marking hypothesis is motivated on grounds which do not include the data of TIGRINYA. That is, the principle-derived hypothesis of marking was not advanced to account for the data of TIGRINYA but rather to account for the already examined data of ARABIC, CHIPPEWA, and SOMALI. If marking does account for the apparent anomalies of the TIGRINYA data, as it did in the case of GALLINYA, then that hypothesis will have again gained additional confirmation.

It appears that TIGRINYA marks the gender of an inanimate and plural noun. Furthermore, under those same conditions, agreement is optional. (Note that elsewhere agreement is obligatory.) Given the already proposed formal universals, the following derivation now becomes possible:

Derivation 25: əti t?ăarabeza wadiX?u
[masc, sing] [masc, plur, inanim] [masc, sing]

Note that if t?ăarabeza 'table' is feminine, the outcome is the same.

Marking applies: əti t?ăarabeza wadiX?u
[fem, plur, inanim]

If agreement does not apply, the following results:

Morphophonemics: əti t?ăarabezatat wadiX?u
'Those tables fell.'

However, if agreement does apply, then the following is obtained:

əti t?ăarabeza wadiX?u
[fem, plur] [fem, plur]

Morphophonemics: ətan t?ăarabezatat wadiX?an
'Those tables fell.'

This derivation is characteristic of all those involving plural and inanimate nouns. Under the earlier specified conditions, marking takes place and agreement becomes optional. The result is exactly the permissible agreement alternations and none of those which are ungrammatical. All of this is accomplished by means of independently justified metatheoretical principles. The explanatory and predictive power of the proposed formal universals therefore appears to be reasonably well-confirmed.

The remaining sentences of TIGRINYA, where agreement alternations are not found, present no problem. They are a direct result of the language-specific conditions not being met. Consequently, marking cannot apply, agreement cannot be optional, and the outcome is predictably that of standard agreement. It should be clear, however, that given the existence of marking and of an optionality condition on agreement, non-standard concords existing side by side with standard concords present very little additional complexity for individual grammars. Rather, complicated agreement patterns are the result of the application of metatheoretical principles under very restricted language-specific circumstances.

7. New data and verification

At this point, one could continue examining agreement patterns in languages reputed to have non-standard types of agreement such as, for example, BENGALI, TURKISH, CLASSICAL ARABIC, and others. A superficial study of the concords of some of these languages does not suggest that they constitute counter-examples to the proposed marking hypothesis. A glance at the data of CLASSICAL ARABIC will demonstrate this.[44]

41) tilka al bintu al kabīratu
that (fem, sing) the girl the large (fem, sing)
'that large girl'

42) ḍalika al waladu al kabīru
that (masc, sing) the boy the large (masc, sing)
'that large boy'

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[44] I am grateful to Mohamed Redjeb for this data.

43) ulā?ik al banāt al kabīrāt
those (plur, no gender) the girls the large (fem, plur)
'those large girls'

44) ulā?ik al aulād al kibār
those (plur, no gender) the boys the large (masc, plur)
'those large boys'

Up to this point, agreement is standard. However, in masculine and feminine plural inanimate nouns (see sentences 46) and 48)), the agreement pattern becomes non-standard.

45) ḏalika al bābu al kabīru
that (masc, sing) the door (masc, sing) the large (masc, sing)
'that large door'

46) tilka al abuābu al kabīratu
that (fem, sing) the doors (masc, plur) the large (fem, sing)
'those large doors'

47) tilka al ṭāwilatu al kabīratu
that (fem, sing) the table (fem, sing) the large (fem, sing)
'that large table'

48) tilka al ṭāwilātu al kabīratu
that (fem, sing) the tables (fem, plur) the large (fem, sing)
'those large tables'

There is nothing in this data suggesting the invalidation of the marking hypothesis. In fact, given marking, the agreement types seem to be as expected. Gender agreement (not number) is obligatory and inanimate plural nouns are marked. Such data is no longer very interesting since it does not shed any new light either on agreement problems or on the marking hypothesis.

Turning to BENGALI, let us again examine data which may have bearing on the marking hypothesis. A glance at this data should again be sufficient to determine its relevance. Note, in the following, that the pluralizer <u>eder̆</u> is obligatory with a non-numerated but plural object noun:[45]

49) ami lok-ke dekhlam
I man-object saw
'I saw a man.'

50) ami lok-eder̆-ke dekhlam
I man-plur-object saw
'I saw men.'

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[45] I am grateful to Kalyan Dutta, a native speaker of BENGALI, for this data.

Note, however, that when a numeral of a value greater than one (i.e. plural) is introduced in the data, the pluralizer is optional.

51) ami ekta lok-ke dekhlam
I one man-object saw
'I saw one man.'

52) ami duto {lok-ederˇ-ke / lok-ke} dekhlam
I two {man-plur-object / man-object} saw
'I saw two men.'

53) ami panchta {lok-ederˇ-ke / lok-ke} dekhlam
I five {man-plur-object / man-object} saw
'I saw five men.'

However, this optionality on the occurrence of ederˇ is found only when the enumerated plural noun is an object. When such a noun is a subject, the pluralizer may not occur at all:

54) ekta lok elo
'One man arrived.'

55) duto lok elo
two man(sing) arrived
'Two men arrived.'

56) panchta lok elo
five man(sing) arrived
'Five men arrived.'

It should be clear that the various agreement patterns in BENGALI do not depend upon marking but rather upon a set of language-specific conditions determining where agreement must apply (for example, sentence 50)), where it is optional (sentences 52) and 53)), and where it may not apply (sentences 55) and 56)). Such data, although exemplifying non-standard agreement, has absolutely no bearing on the marking hypothesis. It only supports earlier claims concerning the necessity of language-specific conditions on the agreement rule.[46]

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[46] Optional plural agreement on nouns modified by a numeral is common phenomenon. In speaking of BENGALI, TURKISH, AMHARIC, and other of Greenberg's 'rigid III' types (1963: 109, #23), Ferguson notes "Expression of plural in the noun is normally absent in nouns when they are used in

Of interest and of importance would be the existence of data which clearly appears to be outside of the range of predictions made by the marking hypothesis. If it can be shown that such data has bearing on marking or on some other related metatheoretical rules and constraints, then this could lead to the modification or even to the total rejection of the principles advanced. If, on the other hand, the presently hypothetical data could be shown to be related to some principles other than to those advanced, then it will not affect the validity of the marking hypothesis.

I will now suggest types of concords which would be considered interesting since, if they exist, they would appear to have bearing on the proposed universals. A case to investigate would be one where there is agreement between two or more categories, for example, noun and adjective, and where the agreeing categories show the following features:

	Noun	Adjective
	[masc, sing]	---------- [masc, plur]
or	[fem, sing]	---------- [masc, plur]

This type of agreement, if it exists, would appear to be outside of the range of predictions made by the proposed hypotheses.

Another case to investigate, if it exists, is one where there is non-standard agreement with features other than those of gender and number. Such features could be those of definiteness, case, person, or any feature operated upon by agreement. Taking person features as example, and assuming that double nominals are the result of agreement rather than a direct deep

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(footnote 46 continued)
constructions with numerals." (1972: 74-114). Although there appears to be no immediate answer to why this phenomenon is so widespread, I suspect that it may be related to the notion of underlying (non-enumerative) and derived (enumerative) plurality. It should furthermore be noted that in numeral plus noun constructions, it is not the numeral that agrees with the noun as in noun phrase internal agreement but rather the noun that (optionally) agrees with the numeral. There is evidence that numerals as well as all other instances of enumerative plurality are derived on the basis of coordinated noun phrases. This suggests that perhaps all of derived plurality is noun phrase external. If this can be demonstrated, it may provide a basis for both the directionality and the optionality of numeral-noun concords.

structure output, then the following kind of data would appear to be relevant.[47] (Note that the bound pronoun would then be the result of features copied (i.e. agreement) from the noun or free pronoun.).

Noun or Free Pronoun		Bound Pronoun +	Verb
	the man ----------	you	danced
or	you ----------	I	danced
or	I ----------	you	danced

If non-standard agreement exists with person features, as is the case with the features of number and gender, then such person concords (i.e. discords) should be possible. The existence of this or similar data would challenge the proposed universal principles.

8. Conclusion

It was seen in this paper that the marking hypothesis has clear advantages over the SFS hypothesis. One of these advantages is that the problems introduced with SFS disappear with the introduction of marking. Marking, unlike SFS, does not bring new power into the theory of grammar since what transformations may or may not do remains unchanged. Another advantage is that marking is inferable on the basis of already defended principles, namely markedness, neutralization, and simplex features. Marking therefore not only provides a description but also an explanation of the various types of non-standard agreement patterns encountered. The fact that markedness has both, support from above (theoretical support) and support from below (empirical support) gives it a definite advantage over the SFS hypothesis which only received limited empirical confirmation.

In order to test SFS and marking, the non-standard types of agreements of various languages were examined. It was argued that non-standard concord is neither the result of deviations in the agreement transformation nor is it the result of a new type of transformational operation (SFS) but rather that it is a consequence of marking, a principled operation. The non-standard

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[47] See Koutsoudas, 1967, and also Hutchinson, 1969 for a discussion of double nominals.

agreements encountered were not always solely the result of marking but also of a set of conditions on the agreement rule. Because of this interplay between marking and agreement, various types of non-standard concords were shown to be possible under very restricted languages-specific conditions. These non-standard concords can be classified into three different categories:

Type I: cases where marking is found and agreement is obligatory (CHIPPEWA, CLASSICAL ARABIC)

Type II: cases where marking is found and agreement is optional (SOMALI, CAIRO ARABIC, GALLINYA)

Type III: cases where no marking is found and agreement is one or all of the following: optional, obligatory, may not apply (BENGALI)

In fact a fourth category could be added for languages such as TIGRINYA which combine both Type I and Type II of non-standard concords. In addition to marking, TIGRINYA offers examples of both optional and obligatory agreement. In such cases, however, obligatory agreement is independent of marking (compare to CHIPPEWA).

The fact that rules, such as the proposed agreement rule, remain universal and unchanged in the face of what appears to be non-standard agreement supports a general claim that has already been advanced concerning the nature of grammar. In speaking of principles for which they have argued, Sanders and Tai state: "Thus, the facts considered here provide support for the hypothesis that languages differ in syntax chiefly as a result of differences in rule-independent derivational constraints and not as a result of the presence or absence of particular rules, the basic non-lexical syntactic processes of natural language being largely if not wholy universal."[48] The arguments presented in this paper independently support this view on the universality of non-lexical syntactic processes in language. Non-standard types of agreement are accounted for by language specific constraints on the application of universal rules and principles.

[48] See Sanders and Tai, 1972:198.

BIBLIOGRAPHY

Bell, Christopher R. 1953. The Somali language. Longmans, Green and Company, London.

Chafe, W.L. 1967 (December). English noun inflection and related matters, from a generative semantics point of view. PEGS paper No. 16, Center for Applied Linguistics, Washington, D.C.

Chomsky, Noam. 1965. Aspects of the theory of syntax. M.I.T. Press, Cambridge, Mass.

Cowell, Mark W. 1964. A reference grammar of Syrian Arabic. Georgetown University Press, Washington, D.C.

Delisle, Gilles L. 1972. Universals and person pronouns in Southwestern Chippewa. Ph.D. dissertation, University of Minnesota. Minneapolis.

_____. 1972 (December). Syntactic feature switching: two cases, WPLU No.10, 51-91.

Ferguson, Charles A. 1972. Verbs of 'being' in Bengali with a note on Amharic, in W.M. Verhaar, ed. The verb 'be' and its synonyms, Philosophical and Grammatical Studies, Part 5, Foundations of Language Supplementary Series, Vol. 14. D. Reidel Publishing Co., Dordrecht, Holland.

Greenberg, J.H. 1963. Some universals of grammar with reference to the order of meaningful elements, in J.H. Greenberg (ed) Universals of language. The M.I.T. Press, 73-114.

_____. 1966a. Language universals with special reference to feature hierarchies. Mouton, The Hague. p. 27.

_____. 1966b. Language universals, in Ferguson, Valdman, Sauer, ed., Current trends in linguistics, Vol. 3 , 61-111. Mouton, The Hague.

_____. 1970 (November). On the 'language of observation' in linguistics, WPLU No.4, G1-G5.

Haywood, J.A. and H.M. Nahmad. 1962. A new Arabic grammar of the written language, Harvard University Press.

Hetzron, Robert. 1967. Agaw numerals and incongruence in Semitic. Journal of Semitic Studies, 12.2.

Hutchinson, L.G. 1969. Pronouns and agreement in Temne. Doctoral dissertation, Indiana University, Bloomington, Indiana.

Kirk, I.W.C. 1905. A grammar of the Somali language. Cambridge University Press.

Koutsoudas, A. 1967. Doubled nominals in Lebanese. Glossa, 1.1, 33-49.

_____. 1971. The strict order fallacy. Indiana University Linguistics Club, Bloomington, Indiana.

Marsack, C.C. 1962. Teach yourself Samoan. The English University Press, London.

Moravcsik, Edith. 1971 (May). Agreement. WPLU No. 5, A1-A63.

Moreno, Martino M. 1939. Grammatica teorico-pratica della lingua Galla. The Gregg Press, Ridgewood, New Jersey.

Ross, J.R. 1969. Adjectives as noun phrases, in Modern studies in English, ed. by Reibel and Schane, Prentice-Hall, Englewood Cliffs, New Jersey.

Sanders, Gerald A. 1968 (June). Some general grammatical process in English. Doctoral dissertation reproduced by the Indiana University Linguistics Club, Bloomington, Indiana.

_____. 1972. The simplex feature hypothesis. An expanded version of the paper presented at the Winter Meeting of the Linguistic Society of America, December 1971, at St. Louis, Missouri. University of Minnesota, Minneapolis.

_____, and James H.-Y. Tai. 1972 (March). Immediate dominance and identity deletion. Foundations of Language, 8.2, 161-198.

Shapiro, Michael. 1972 (June). Explorations into markedness. Language. 48.2, 343-365.

Tomiche, Nada. 1964. Le parler Arabe du Caire. Mouton, La Haye.

Traugott, Elizabeth Closs. 1972. A history of English. Holt, Rinehart and Winston, New York.